



# MISSOURI DEPARTMENT OF NATURAL RESOURCES

## Storage of Lead-Acid Batteries

Technical Bulletin

06/1999

Division of Environmental Quality  
Solid Waste Management Program

### Introduction

Missouri law (Sections 260.250 through 260.266, RSMo) requires lead-acid battery wholesalers and retailers to accept used lead-acid batteries from customers in quantities at least equal to the number of new batteries purchased. The law also prohibits the disposal of lead-acid batteries, requiring that such batteries be delivered to a recycling or resource recovery facility permitted by this or another state or to the agent of a battery wholesaler or manufacturer for delivery to a permitted secondary lead smelter. It is expected, therefore, that battery wholesalers and retailers will have need to store used lead-acid batteries for limited periods of time. This technical bulletin is intended to provide guidance for such short-term storage. Anyone wishing to store lead-acid batteries longer than 90 days must request approval to do so from the Department of Natural Resources (DNR), Solid Waste Management Program, P.O. Box 176, Jefferson City, MO 65102. Questions regarding the management of used lead-acid batteries may be directed to the same address, or you may contact your nearest Department of Natural Resources regional office. A list of facilities that may accept lead-acid batteries for recycling or resource recovery is also available from DNR.

Throughout this document, the term "battery" refers to lead-acid batteries.

### General Storage Provisions

The safe storage of batteries begins with a suitable location. Batteries should be stored indoors or under cover to keep them dry and to prevent damage to the casings. Restrict or secure the area to discourage vandalism or theft of the batteries. Also, the batteries should not be stored near combustibles, such as gasoline, because of the risk of sparks caused by electrical discharge of the batteries. The area also must be well ventilated. Storage of batteries outdoors requires a stormwater permit from the DNR Water Pollution Control program. For more information on this permit, call (573) 751-1300.

A major concern with batteries is the risk that the acid contained in the battery may leak or spill. These batteries should be handled carefully. Handlers should not attempt to drain the acid from the batteries. Precautions should be taken to prevent spills and to manage spills if they occur. Batteries should be stored in such a way that spills will be contained. One way to accomplish this is to store batteries on or above a sealed concrete floor with a curb. Storing batteries directly on the ground or in a manner that would allow spills to leak onto the ground is not recommended, since the acid and dissolved lead could damage the environment and cause potential remediation and liability concerns for the property owner.

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The batteries should be stored in a way that will allow easy inspection of the batteries, isolation of leaking batteries and cleanup of spills. Storing the batteries on pallets or on a sloped floor will allow the operator to see spills. If the batteries are stacked, they should be stacked in such a way that the operator can easily locate and isolate the leaking batteries and minimize damage.

## **Safety Precautions**

As the name indicates, the major components in lead-acid batteries are lead and acid. The acid is sulfuric acid, which reacts with lead and lead oxide to generate electricity. Because of hazards associated with acid, lead and electricity, special care must be taken when handling and storing these batteries.

A person storing batteries should develop procedures for handling spills and leaking or cracked batteries. The procedures should be written and made accessible to all employees. Spills should be neutralized carefully with an appropriate alkaline material such as agricultural lime or baking soda (never add water to acid) and cleaned up immediately. Cracked or leaking batteries should be placed in a container impervious to the acid, such as five-gallon plastic bucket. Anyone handling the batteries or spilled material should wear protective clothing and eyewear. Spills that leave the property or contaminate a waterway may require emergency action and should be reported to DNR immediately by calling (573) 634-CHEM, and by following the directions of the answering safety officer. Large spills and the subsequent cleanup may result in the generation of hazardous waste. If you have questions about whether there is a hazardous waste concern at your site, contact the DNR Hazardous Waste Management Program. If spills are to be washed down the drain, the local publically owned wastewater treatment operator should be contacted.

Safety equipment should be available near the battery storage area. Protective clothing, gloves and eyewear should be ready for use when handling batteries or cleaning up spills. The storage area should be located in an area convenient to a sink or other water source that can be used in case acid contacts someone's skin. It is recommended that an eye wash sink or eye flush kit be available nearby. Also, a neutralizing agent, such as baking soda or agricultural lime, or commercial spill kit should be conveniently available. The Occupational Safety and Health Administration (OSHA) has general information available on employee safety training and emergency procedures. For more information, contact OSHA at (314) 425-4249.

The storage of large quantities of batteries may also be regulated under the Emergency Planning and Community Right-to-Know Act (EPCRA) and may be subject to other laws such as the Clean Water Act. If you will be storing over 200 batteries at any given time, you may be subject to record keeping or reporting requirements under EPCRA. For more information on EPCRA, contact the Missouri Emergency Response Commission at (573) 526-9237, or toll free 1-800-780-1014.

For more information call or write  
Missouri Department of Natural Resources  
Solid Waste Management Program  
P.O. Box 176, Jefferson City, MO 65102-0176  
1-800-361-4827 or (573) 751-5401 office  
(573) 526-3902 fax  
(<http://www.dnr.state.mo.us/deq/swmp>) Program Home Page

Missouri Department of Natural Resources  
Hazardous Waste Management Program  
P.O. Box 176, Jefferson City, MO 65102-0176  
1-800-361-4827 or (573) 751-3176 office  
(573) 751-7869 fax  
(<http://www.dnr.state.mo.us/deq/hwp>) Program Home Page

Missouri Department of Natural Resources  
Environmental Services Program  
Emergency Response  
P.O. Box 176, Jefferson City, MO 65102-0176  
1-800-361-4827 or (573) 526-3315 office  
Emergency Number: (573) 634-2436  
(573) 526-3350 fax  
(<http://www.dnr.state.mo.us/deq/esp>) Program Home Page

Missouri Emergency Response Commission  
P.O. Box 3133, Jefferson City, MO 65102  
1-800-780-1014 or (573) 526-9237 office

U.S. Environmental Protection Agency  
Region VII Office 901 N. 5th St.  
Kansas City, KS 66101  
1-800-223-0425 or (913) 551-7003  
24-Hour Spill Response Number: 1-800-424-8802 or (913) 281-0991

Occupational Safety and Health Administrator (OSHA)  
Western Missouri (Kansas City)  
1-800-892-2674 office  
Eastern Missouri (St. Louis)  
(314) 425-4249 office